



Rapid Delivery of Combat Systems Capability



“Sea Power to the Hands of Our Naval Force”

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PEO IWS 1.0

PEO IWS X

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Strategic Imperative

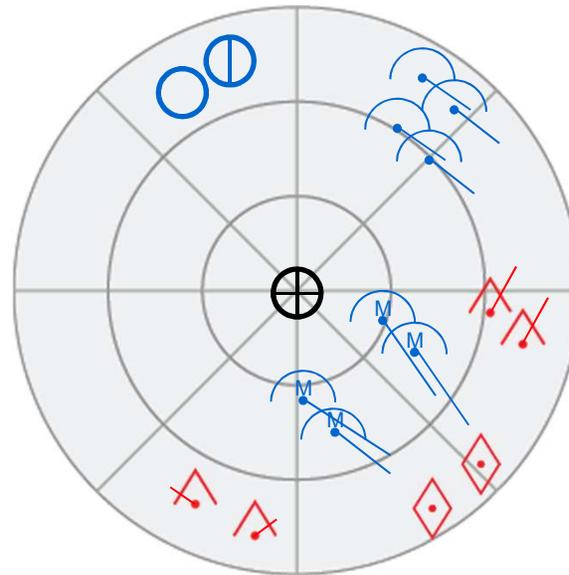
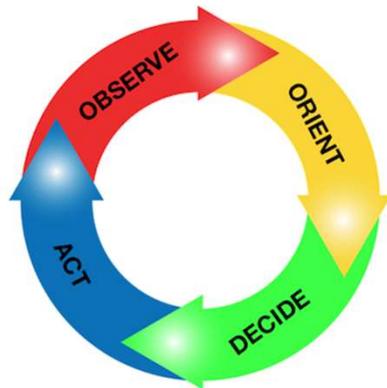


- Our nation's centuries-long struggle to protect freedom of the individual, society, and the seas continues
- Russia and China have modernized their navies to challenge the USN's historical superiority in power projection from aircraft carriers
- Surface warfare increase in lethality
 - Long-range fires
 - Terminal defense

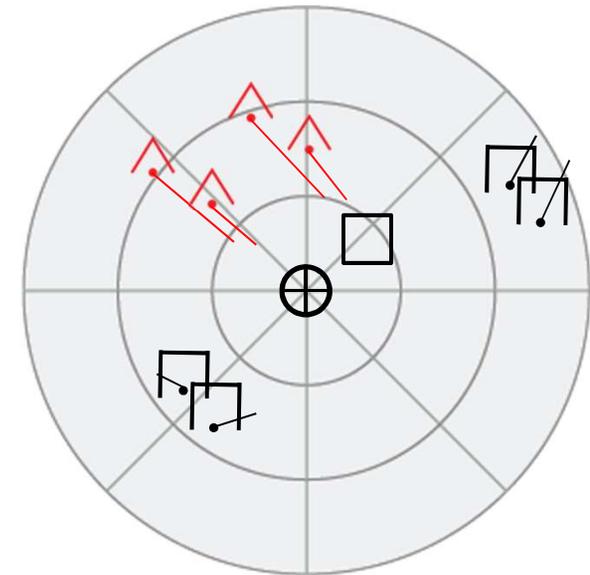
We must rapidly deliver the capability the Fleet needs!



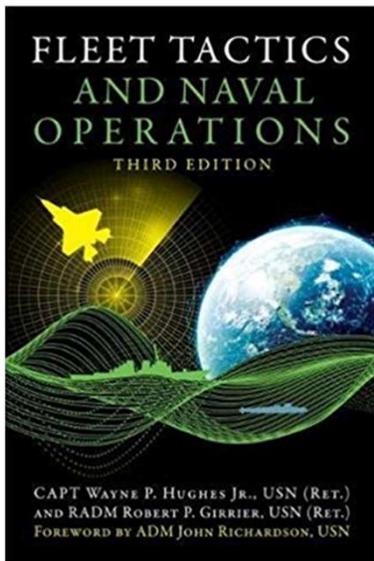
Desired Tactical End State



Our View



Adversary's View



Attack Effectively First: “Over the course of history, the central problem of naval tactics has been to attack effectively, that is to say, to bring the firepower of the whole force into battle simultaneously.”

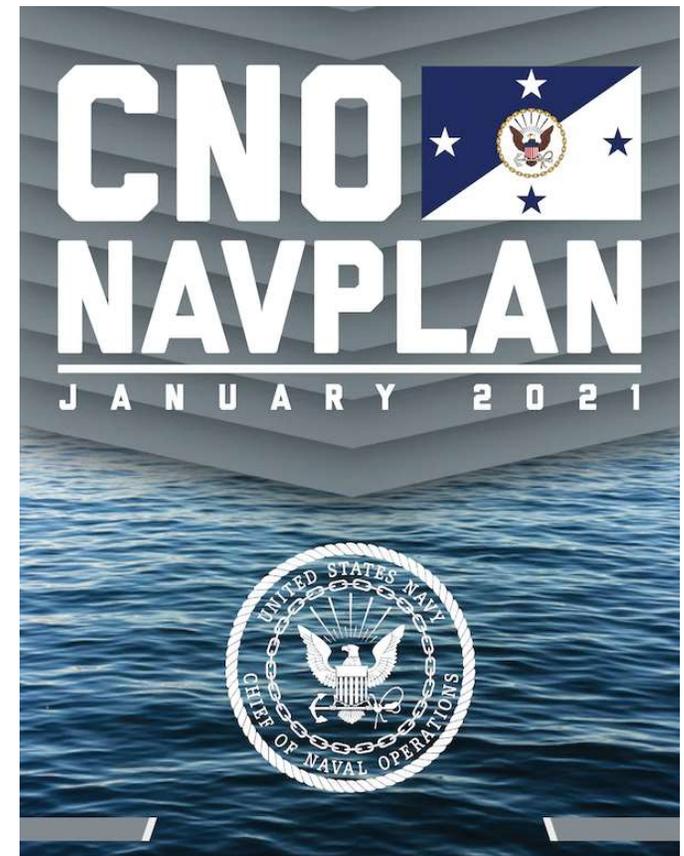
-- Fleet Tactics, CAPT Wayne P. Hughes, Jr., USN (ret.)

Goal is Continuous Delivery of Continuous Combat Systems Superiority



Navy Operational Architecture

- China's naval modernization and expanding infrastructure makes them the most pressing long-term strategic threat to the United States
- In response the Navy is deploying the **Navy Operational Architecture (NOA)**: “We must close the kill chain faster than our rivals with a resilient web of persistent sensors, command and control nodes, platforms, and weapons”
 - CNO Navplan, Jan 2021
- The NOA will enable the **Integrated Combat System (ICS)**, which will connect sensors, networks, and weapons across a distributed naval force afloat and ashore
 - The AEGIS Common Source Library (CSL) enables baseline consolidation and will form the software foundation for the future **Integrated Combat System**



ICS + Project Overmatch are foundational components of NOA



Revolutionizing How We Deliver Combat Capability

- In our current business model, we struggle to deliver at the pace required. How do we deliver high-quality capability faster?

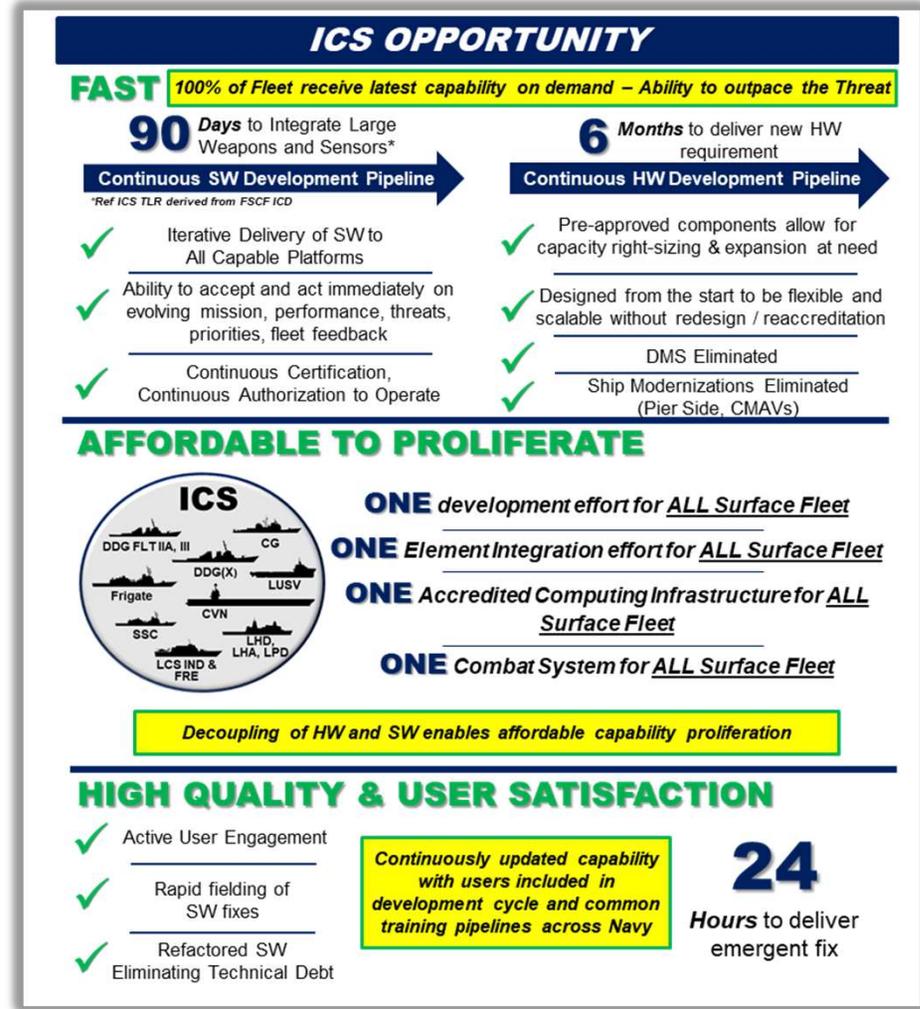
- **The Three Ways...**

- Maximize flow of work and optimize the system of continuous delivery
- Ensure fast and constant feedback
- Create a generative, high-trust culture that supports disciplined experimentation

(Reference: *The DevOps Handbook*, Kim, Humble, Debois, and Willis, 2016)

- Implications for Combat System Development

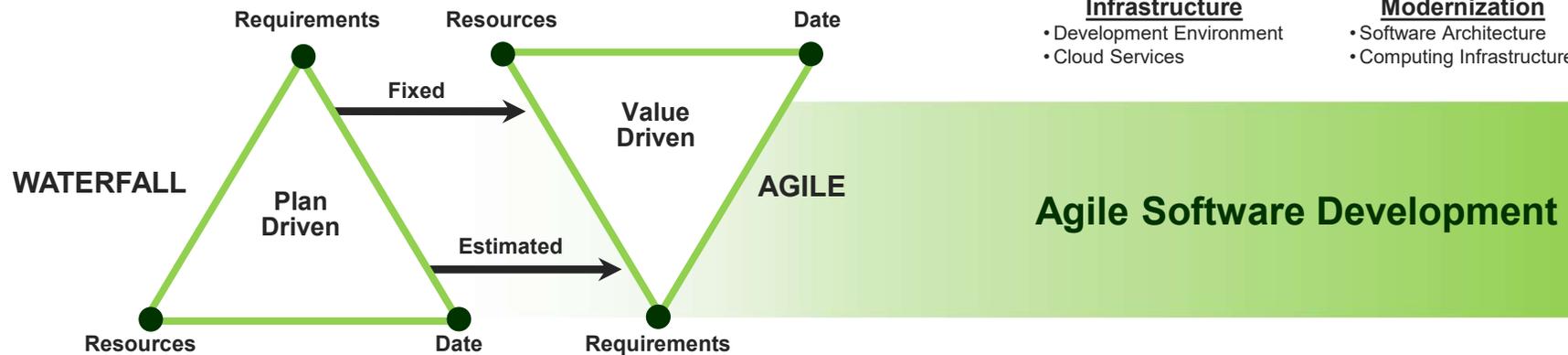
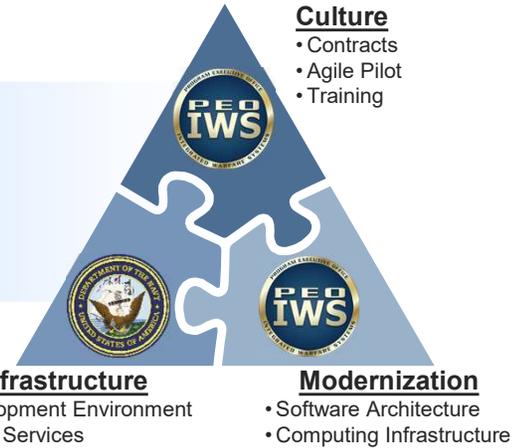
- **The Government owns the development/test pipeline**
- Closer ties with the user/fleet
- Optimize value stream for requirements, development, integration, test, and deployment (and support with consistent funding)
- Maximize fleet feedback for continuous improvement of both the product and the process





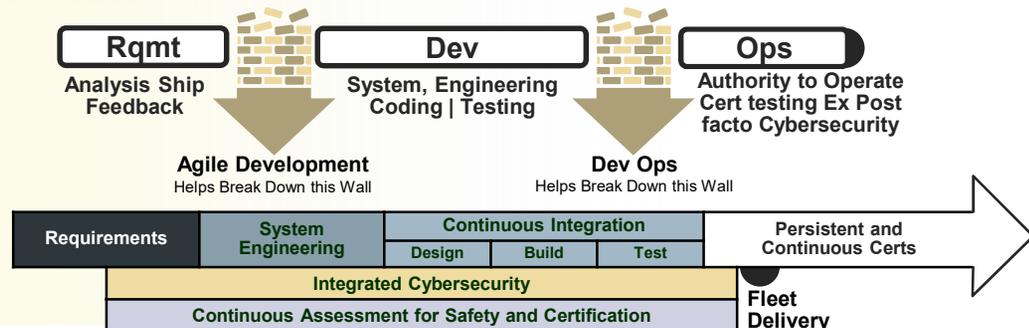
Continuous Integration (CI) / Continuous Delivery (CD) Pipelines

A Continuous Integration / Continuous Delivery (CI/CD) pipeline requires a modern computing infrastructure, Agile software development methodology, and Development, Security, Operations (DevSecOps) engineering culture and practices



DevSecOps Culture and Practices

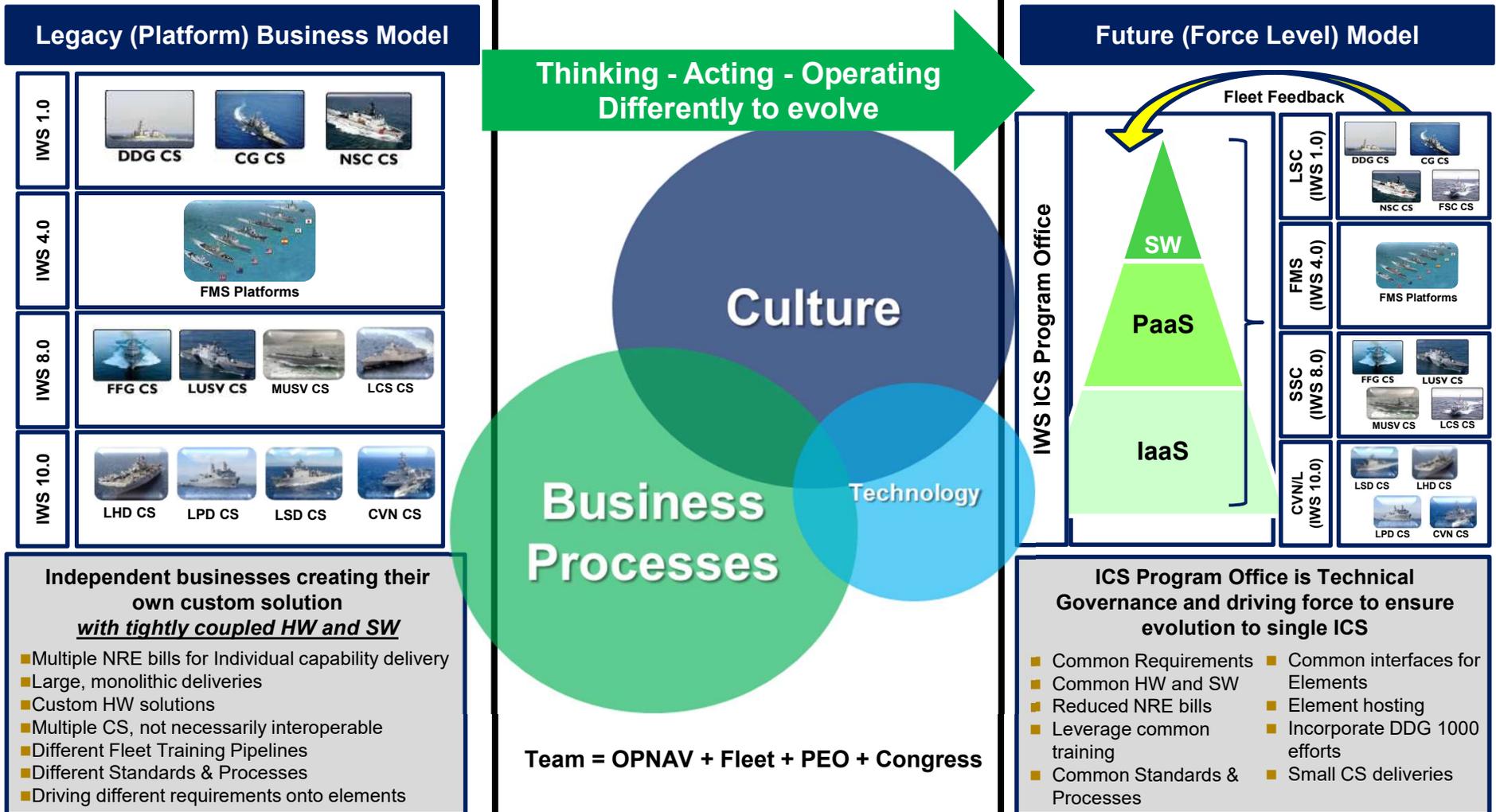
Traditional Process





ICS Evolution

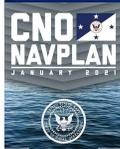
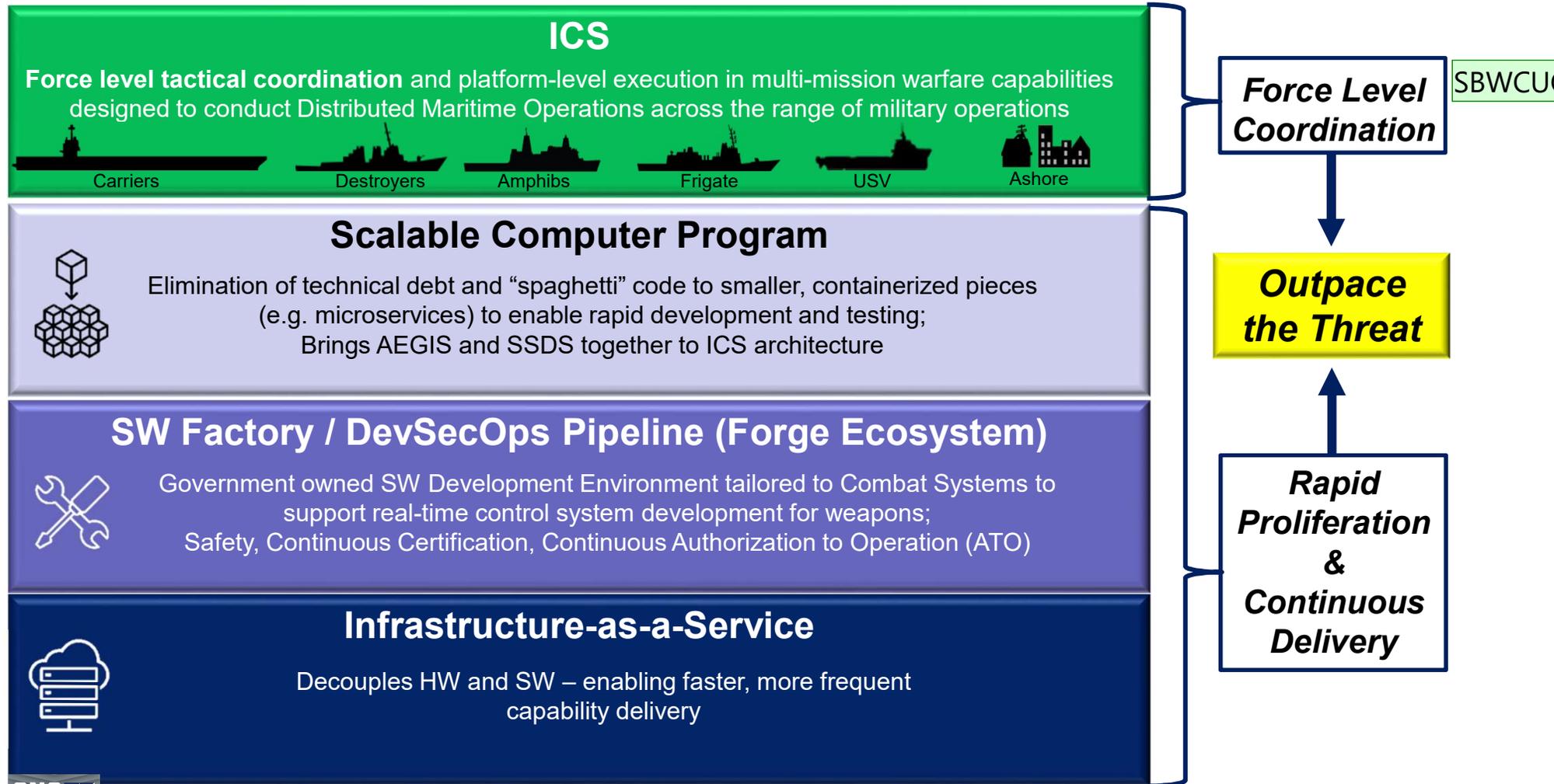
A Cross Functional Team Approach



Broad cultural changes & disrupting processes leads to faster delivery, higher quality, wider distribution - from requirements to production



Modernizing AEGIS & SSDS to the ICS while Driving Affordability



“We must close the kill chain faster than our rivals with a resilient web of persistent sensors, command and control nodes, platforms, and weapons” – CNO Navplan, JAN 2021

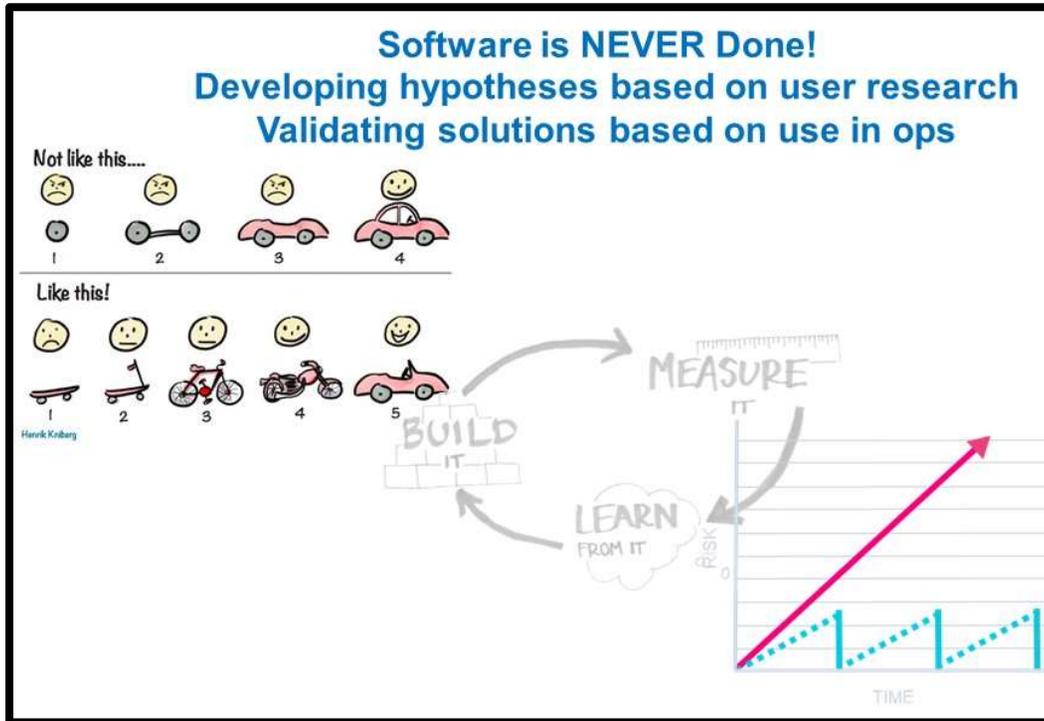
Slide 8

SBWCUC(2 Add a picture of a building here too to go along with my other comment

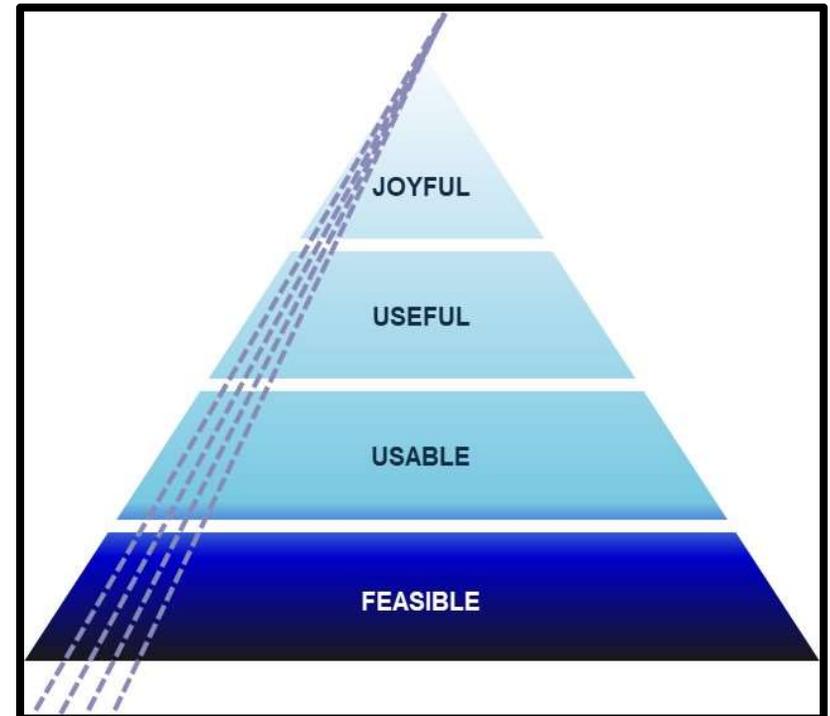
Schneider, Bryan W CDR USN CNO (USA), 1/5/2022



Development Way Ahead



**User Focus, Technology to User, Iterate –
Always Burning Down Risk**



Delivering a Feature at a Time

**Changing the Development Paradigm to Focus on the User
Today we Deliver the Pyramid, Tomorrow We'll Deliver a Slice at a Time**



“Sea Power to the Hands of Our Sailors”